Navy ILE
Technical Specifications and Guidelines

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List of Effective Pages

Section	Page(s)	Affected paragraph(s)

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Change Record

Paragraph	Description of Change	Date	Authorized By
15.0	Addition of Standalone Content Delivery	2 Mar 06	J. Best

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Acronyms, Abbreviations, Definitions

See the ILE website for a list of acronyms, abbreviations and definitions.

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1.0 Abstract

The Integrated Learning Environment (ILE) provides an environment that supports the seamless delivery and management of training in a “blended” training format. The ILE will provide the IT infrastructure necessary to provide and manage both self-paced and instructor lead training. Currently there exists multiple stove piped legacy systems that track, deliver and manage training and training support. Those individual systems must be “integrated” or bound together to present a single touch point.

The ILE strategy establishes a seamless training management and delivery capability in support of the Revolution in Training goals of providing the right training to the right people in the right amount at the point of need. Implementing the ILE requires the establishment of the appropriate IT infrastructure to establish and manage reliable and efficient capabilities to manage and support training accounts, opportunities and resources in multiple formats. Current legacy training management systems and new emerging technology systems must be fully and seamlessly integrated to provide a single access and management point for all events and activities.

This document outlines the technical specifications and guidelines required to insure the technical compatibility between instructional content and the Integrated Learning Environment. It is important to note that the technical guidance contained within this document must be used in concert with the broader guidance contained within the current release of the Navy ILE Content Design, Development, and Deployment Guidelines. It should also be noted that, in future releases of this document, the guidance provided will increase significantly in scope and level of detail. The intent of this initial release is focus strictly on providing the core guidance deemed most critical to insuring compatibility with the ILE.

The guidelines in this document and the associated Navy ILE Content Design, Development, and Deployment and Metadata Guidelines should be referenced and serve as the baseline for procurement contracts involving the acquisition, development and/or integration of any Navy Education and Training content, materials or assets.

2.0 ILE Architectural Overview

ILE currently consists of the following applications:

- Navy Knowledge Online (NKO) Portal-
  - Single point of entry to ILE.
  - Provides integration framework for legacy systems.
  - Appian Knowledge Management Portal
  - Located at http://www.nko.navy.mil.
  -
- Learning Management System (LMS)-
  - Contains the ILE master catalog for accessing informal education and training content.
  - ThinQ Training Server Learning Management System
  - Primarily manages learner lesson plans and training day to day progress
  - Allows management of learning events
  - Access via NKO

- Learning Content Management System (LCMS)-
  - Provides for creation, storage, reuse, management, and delivery of learning content.
  - OutStart Evolution Learning Manager
  - Provides a template-driven environment for fast, efficient and consistent authoring of knowledge based content.

- Corporate Enterprise Training Activity Resource System (CeTARS) –
  - Consolidation of independent schoolhouse and training information systems into a single source of classical instructor lead schoolhouse/training information systems.
  - CeTARS integrates these systems as a single source for schoolhouse/training information. As a single integrated system, the CeTARS mission is to provide improved training information availability, timely and accurate schoolhouse data and near real time student tracking to the Navy/Marine Corps training community.
  - CeTARS supports 100's of activities and schoolhouses via the Web, both within the expanded bandwidth of the CeNET community and Navy's Non-Classified Internet Protocol Router Network (NIPRNET) Wide Area Network (WAN) domain.
  - Can be located at https://wwwnt.cnet.navy.mil/cetars/cetars.htm

- Navy Training Management and Planning System (NTMPS)
  - Data warehouse for all training and education information including Sailor entry for Electronic Training Jacket.
  - Can be located at http://www.ntmps.navy.mil

- Skill Object Data Mart

- Repository of required skills, abilities, tasks and knowledge required to perform Navy jobs and duties.

- 5 Vector Model (5VM)

The 5 Vector Model (5VM) defines the parameters around which a Sailor's personal and professional development is designed. Eventually, the 5VM will change the promotion and detailing process. For more information on the 5VM, go to http://www.excel.navy.mil/. The 5 Vectors are:

- Professional Development
- Personal Development
- Leadership
- Certifications & Qualifications
- Performance

3.0 Delivery Environment

Unless individual delivery orders permit otherwise, vendors should design content for delivery via a web browser that is running on a PC configured in accordance with NMCI Gold Disk. Content developers **MUST NOT** design content requiring software components beyond those addressed in the following discussion on Gold Disk Disk contents.

Developers can expect client browsers will be configured in accordance with DISA's Configuration Guidance for Client Workstations and Applications To Implement the DoD Policy on the Use of Mobile Code Microsoft Windows 95/98/NT/2000-Based PCs Version 3, September 2004. This document provides configuration guidance for browsers, e-mail products and office automation applications running on MS Win 95/98/2000/NT-based PC Workstations. It is available at https://iase.disa.mil/mcp/index.html.

Other browser requirements:

- W3C Web Standards located at the W3C Website, http://www.w3c.org/WAI
- Java virtual machine and JavaScript enabled
- Cookies enabled
- MSIE 5.00.3809 or Sun Micro Systems JRE 1.3 or higher. Content should work with both versions

4.0 Workstation Minimum Hardware Specifications

Content providers should ensure their content runs as intended on systems meeting the following minimum hardware specifications.

- IBM compatible PC running Windows, 98, ME, NT, XP and 2000

- Microprocessor Speed: Pentium 1 GHz
- Hard Drive: 20 GB
- RAM: 128 MB
- Sound Card: 16 bit
- Speakers
- CD-ROM Drive: 12x
- Monitor display resolution 1024 x 768
- Color Depth: 16 bit
- Fonts: Small

5.0 Gold Disk Contents

The most recent version is September 2004. Refer to
http://www.nmci-eds.com/downloads/Gold_disk_contents.pdf

6.0 Afloat Technical Specifications – COMPOSE 3.0

6.1 Server Only Baseline Applications 3.0

Windows 2000 Advanced Server
Windows 2003 Standard Server 2003 SP1
Ipswitch WS-FTP Pro 8.01
Microsoft Data Access Components 2.8
Microsoft Inernet Explorer 6.0 SP1
Netscape 7.2
NicoMak WinZip 9.0 SR1
Real One Player 10.5 B6.0.12.1056
Macromedia Shockwave 10.1.0
Macromedia Flash Player 7.019.0
Adobe Acrobat Reader 7
Apple QuickTime Movie and Audio Viewer 6.5.2
Microsoft ISA Server Enterprise Edition
Microsoft ISA Server Standard Edition 2004 SP1
Microsoft Internet Information Server 6
Microsoft Exchange Enterprise Edition 2003 SP1
Microsoft Netweeting 3.01
Microsoft Windows Media Player 10
Symantec AntiVirus Systems Center Console 10.0.0.359
Symantec Live Update Admin Tool 2.6
Symantec AntiVirus Corporate Edition 10.0.0.359

Symantec Mail Security 4.6.1_b107
Veritas Backup Exec for Advanced Server 10
Terminal Server 5.2

6.2 Workstation Baseline Applications 3.0

Microsoft Windows 2000 Professional
Microsoft Windows XP Professional SP2
Microsoft Internet Explorer 6.0 SP1
Symantec AntiVirus Corporate Edition 10.0.0.359
NicoMak WinZip 9.0 SR1
Ipswitch WS-FTP Pro 8.01
Adobe Acrobat Reader 7
Real One Player 10.5 B6.0.12.1056
Macromedia Shockwave 10.1.0
Flash Player 7.0.19.0
Apple QuickTime Movie and Audio Viewer 6.5.2
Microsoft Netmeeting 3.01
Microsoft Windows Media Player 10
Microsoft ISA Server Enterprise Edition 2004 SP1
ActivCard Gold 2.2 SP2
Personal Security Manager for Netscape
Netscape 7.2
Microsoft Office XP Professional
Microsoft Office 2003 Professional 2003 SP1
Java Runtime Environment 1.5.0.02

NOTE: Compliance with the COMPOSE 3.0 Afloat Technical Baseline for ILE Learning Content contained herein is required for content development contracted after the release date of this document to the maximum extent practicable. Currently there are potential conflicts between current NMCI Gold Disk and COMPOSE 3.0.

- **Macromedia Flash and Shockwave Players versions**
- **No Macromedia Authorware Web Player on either baseline (Gold Disk - can be pushed down to the users)**
- **Real One Player not supported on NMCI Gold Disk**
- **Java Runtime Environment – Microsoft and Sun conflicts**

7.0 Gold Disk or COMPOSE 3.0 Waiver

If the use of a newer technology is deemed necessary for delivering a more robust, interactive and engaging product, vendors can submit that technology for consideration of Gold disk or Blue disk inclusion. It is anticipated that the majority of these newer technologies would be in the form of a runtime module (web player, plug-in, etc.). Introduction of new delivery technologies must follow a strict process for submission, testing, approval and implementation:

1. Request must be submitted by a DON sponsor.
2. An entry must be made in the Defense Automated Document Management System (DADMS) –accomplished by the DON sponsor.
3. Request is reviewed by the Training Functional Area Manager (FAM)
4. The plug-in and any necessary installation instructions must be submitted via the DON sponsor for testing in NMCI lab.
5. The costs for inclusion and subsequent 'push' of the technology must be funded.

There is a significant expense involved with additions to the Gold Disk. The process for submission, testing and approval will require a minimum of 90 days to accomplish. All requests must be made through NETC, N63.

8.0 508 Accessibility

The Navy is committed to making all web-based learning content accessible to each person who uses the site. Section 508 of the Rehabilitation Act requires all Federal agency electronic and information technology is accessible to people with disabilities, including employees and members of the public. Content developers must ensure that content is Web-accessible to persons who may have disabilities. All ILE content should at a minimum meet all Priority 1 Checkpoints identified in W3C Web Accessibility Guidelines. In addition, developers must provide written documentation identifying which checkpoints were met. If, after best efforts, you cannot create an accessible page, provide a link to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is updated as often as the inaccessible (original) page. It is critical that the development team validate designs and page templates and the content of the web-based training throughout the development process to ensure that the web pages are accessible to all users. Web-based designs should be validated at every development milestone to avoid time consuming and potentially costly revamping efforts. Additionally, content can be made more accessible if developed with Cascading Style Sheets (CSS). ILE content developers are encouraged to read the W3C Web Accessibility Guidelines at the W3C Website, http://www.w3c.org/WAI.

9.0 Mobile Code

Mobile code is an executable software program or script that traverses a network and executes at the destination machine. The DoD Policy memo further describes mobile

code as software obtained from systems outside the enclave boundary that is downloaded and executed on the local system without explicit installation or execution by the recipient. A simple click of the mouse on a Web link could expose the user to malicious mobile code. These programs and scripts are provided as content by Web Servers to the user's Web browser. In most cases, the user is probably not aware that the Web browser is requesting, downloading and executing mobile code on their computer. Content developers should be familiar with and follow the recommendations concerning mobile code issues.

The controlling mobile code policy memo and the following guides are recommended for building content destined to run in the ILE can be found at https://iase.disa.mil/mcp/index.html

- Mobile Code Policy Memo, 7 November 2000
- Mobile Code FAQ's, 3 May 2002
- Mobile Code Developer's Guide, 15 August 2002

Developers can set up a simulated workstation environment to test content for mobile code using the Configuration Guidance for Client Workstations and Applications To Implement the DoD Policy on the Use of Mobile Code Microsoft Windows 95/98/NT/2000-Based PCs Version 2, 07 April 2003. This document can be found at https://iase.disa.mil/mcp/index.html.

The document presents step-by-step configuration guidance on the use of Category 1 and 2 mobile code technologies, along with guidance to protect against malicious mobile code in email (e.g., viruses, worms), as defined in the referenced policy document. Developers can expect that end users will be configured in a similar way.

10.0 Bandwidth Constraints

Although it is the goal of ILE to provide a rich and engaging learning experience, it is nonetheless necessary to balance this goal against constraints that may be present in the ILE environment or at the end user's device. Principle among these potential constraints is the finite bandwidth available between an end user and the device employed for delivery of that user's ILE content. Therefore, it is necessary to insure that ILE content developers assess the performance of their deliverables in a representative environment. Accordingly, future content Delivery Orders, Statements of Work and Statement of Objectives may include requirements relative to the responsiveness of content as well as the methodology by which responsiveness will be measured.

10.1 Design Considerations That Affect Bandwidth Usage

A goal in delivering any learning event is to maintain intrinsic motivation and to not detract from the learning experience. Those pages/modules that take too long to load can indeed have that very effect. Much can be controlled by the choice of graphics formats, compression/decompression (codec) and layout techniques deployed for the learning event.

10.2 File Size

Experience shows that no learning event page (or any web page, for that matter) should exceed 10 seconds to completely download and present the content to the end user. As a general rule of thumb, a web page should be kept at a file size not to exceed 70 kilobytes, and ideally, would not exceed 38-45 kilobytes in size. This file size includes the text content and the accumulated graphic content file sizes. HTML compression schemes are fairly efficient through the built-in HTTP codec schemes. Consequently, graphics files will have the biggest impact on the amount of time required to load within the browser and the amount of bandwidth required for delivery. See discussion on the use of graphics below.

10.3 Page Layout Mechanisms

The use of browser frames should be avoided. Essentially, a document that separates the page into top, bottom, left, and content frames requires the download of the equivalent of four separate pages. The alternative to have complete control over the layout of the learning event page is to make use of Cascading Style Sheets (CSS) and/or borderless tables.

When taking advantage of tables to position content within a web browser, multiple tables with content will appear to load much faster than a single table containing the same content. Additionally, it is critical to force the table size and table cell sizes to finite values. This will considerably speed up rendering the page to the end user. Example:

```
<table width=”600”>
        <tr width=”600”>
                <td width=”320”></td>
                <td width=”280”></td>
        </tr>
</table>
```

10.4 Use of Graphics

The primary graphics formats used within web browsers are Graphics Intermediate Format (GIF), Portable Network Graphics (PNG) or Joint Photographic Experts Group (JPEG). GIF files are limited in color display to 256 colors, but will provide sufficiently robust graphic representation for the majority of needs in a compact file size. PNG provides higher color saturation, but also provides relatively small file sizes. JPEG should be reserved for photographs in most cases, but where possible, JPEG compression techniques should be deployed to reduce the file size. Note that JPEG compression is ‘lossy’, thus, the developer will need to make a tradeoff on file size versus the quality of the image.

When possible, avoid using graphics to represent text. This is usually done to display an unsupported font or color. Text phrases are often only a few bytes in size, but their graphic equivalent is often a few thousand bytes.

10.5 Use of Audio/Video

The delivery of audio is much more critical, from the learning distraction perspective, than video. Gaps in video files (lost frames) are far less distracting due to the Gestalt phenomenon. Any disruption of audio due to bandwidth constraints can severely disrupt the learning process.

Video files must take maximum advantage of the codecs supported within the players on the NMCI gold disk in order to keep the file sizes small. Additionally, some streaming technologies should be considered if supported by the ILE. Audio compression for human speech is usually sufficient at 8Khz sampling rates, which will keep the file sizes small.

When the need to synchronize audio with video arises, an efficient use of bandwidth is possible using Synchronized Multimedia Integration Language (SMIL) technology.

10.6 Mobile Code Objects

Where possible, download progress indicators should be used when making use of mobile code technologies. These files are often larger than the total page size recommendations out of necessity for the robustness of the content they are delivering

10.7 Bandwidth Constraints Summary

Although individual procurements may tailor this guidance, unless stated otherwise testing will be done in a network environment in which available bandwidth can mimic the equivalent of DSL light technologies (~200kbps). With this bandwidth constraint in place, compliance with the following criteria shall be demonstrated:

- Maximum time for initial lesson loading – 10 seconds,
- Maximum time to proceed to successive screens/frames of the lesson – 5 seconds,
- Maximum time for initial response to a user interaction – 3 seconds.

The contractor shall be responsible for successfully conducting performance testing at their facility prior to submitting final deliverables to the government. Any deficiencies found during this testing will be corrected by the contractor prior to acceptance of deliverable.

11.0 User Control of Lengthy Operations

There may be instances in which there are legitimate reasons for ILE content to run for relatively long periods without any direct user interaction. For example, there might be instructional value in an extended video segment. However, even in such circumstances, ILE content should include provisions that allow the learner to terminate any such sequence prematurely. Accordingly, any ILE content in which there are autonomous sequences (video, downloads, animations, etc.) of greater than 15 seconds shall have provisions that allow early, user controlled, termination of that sequence. Additionally, should the learner exercise the early termination option, termination must be performed in a controlled and graceful manner with the learners system left in a stable state and without any consequential loss of data of functionality.

12.0 File Structure, Naming and Storage

During the design and development process, the designers, developers, technical writers, programmers, subject matter experts, and quality assurance personnel handle numerous files of varying types. Creating a standard format for all folders and file names will make it faster and easier for all parties to identify and located the files they need. At a minimum, a file should include the name, and/or number of the course for which it was created, the module or lesson number, a description of the item, and a version/revision number. The names should be as intuitive as possible, so that developers and programmers can quickly and easily identify files without having to view the contents of each file to ensure they are using the correct file. In addition to standard file names and conventions, ensure that, during the development process, files are stored in a central location and accessible to the entire production team. Filenames should not have spaces or special characters and should not be longer than 20 characters.

13.0 Server Side Scripting

Server-side scripting technologies such as Active Server Pages (ASP), PHP Hypertext Preprocessor (PHP), and Cold Fusion often change and are sometimes not backward compatible. In addition, server-side technologies are platform-dependent and don’t promote portability. The Navy ILE strongly discourages against developing content that is strictly dependent upon any server-side scripting technology.

14.0 Client Side Scripting

Content developers are encouraged to create content according to the W3C Document Object Model (DOM). The DOM is a platform- and language-neutral interface that will allow programs and scripts to dynamically access and update the content, structure and style of documents. The document can be further processed and the results of that processing can be incorporated back into the presented page. The DOM provides a

standard set of objects for representing HTML and XML documents, a standard model of how these objects can be combined, and a standard interface for accessing and manipulating them. Content developers can support the DOM as an interface to their data structures and APIs, and write to the standard DOM interfaces rather than browser-specific APIs, thus increasing interoperability. Dynamic HTML (DHTML) is a term used to describe the combination of HTML, style sheets and JavaScript that allows documents to be animated. DHTML can be used by content developers as long as the syntax utilizes the standards such as the DOM and semantics of the general purpose, cross platform, vendor-neutral scripting language ECMAScript.

15.0 Standalone Content Delivery

There will be cases when ships, shore-based units, or individuals have limited or no Internet connectivity. In these cases, ILE intends to provide commands or individuals with standalone versions of content. The standalone versions will not require an Internet connection to function, but will track the student's progress while he or she completes the content.

To offer this flexibility, it is imperative that developers create content in accordance with ILE Content Development guidance. Adherence to ILE Content Development guidance enables ILE to standardize tracking approaches and learning experiences for users. Developers should avoid using server-side technologies which might preclude ILE from offering content in an offline fashion.

If a developer has a requirement to deviate from existing ILE Content Development guidance, the developer must (1) propose an alternate solution for delivering content in a standalone mode, (2) obtain permission from the Content Sponsor (if applicable), and (3) receive approval from the ILE Chief Engineer prior to beginning content development.

Distribution of standalone versions of content is currently available on a limited basis. However, today's standalone content does not provide progress tracking and reporting. A more widespread availability of standalone versions of content with progress tracking and reporting capabilities is planned following the review and testing of identified solutions.

16.0 Cascading Style Sheets

Before version releases, 6.2 of Netscape and version 6 of Internet Explorer, web developers faced difficulties in implementing many of the W3C standards because the browsers previously did not implement accessible technologies like Cascading Style Sheets or implemented them inconsistently. Now content can be made more accessible if developers use Cascading Style Sheets (CSS). With CSS-styled pages, users can easily apply personalized formatting to web documents. A page design using specific font colors and backgrounds, for example, presents a problem for users with color blindness: the contrast between the text and background may not be enough for the text to be distinguishable. If the colors are set via a style sheet, users can set their browser

preferences to override your settings and can apply their own style sheet to the page instead. With CSS-styled pages, the user can transform web content into a format that addresses their requirements for accessibility.

17.0 Streaming Media

Most Real Network Media and Windows Media files will be placed on a dedicated ILE streaming media sever. The current ILE architecture utilizes the Windows Media Services. The ILE architecture currently does not offer the capability to support Flash Remoting. During the content development process and prior to final content submission it is imperative that the content developer engages the ILE content management team for recommendations, ILE supported streaming media types and up-to-date instructions for coding media file URLs within their content. The ILE Content Management Team can be reached via the ILE Support Center at https://ile-support.nko.navy.mil.

Due to current media vendor technical limitations “streaming media” will not run in an https/SSL environment. Therefore the streaming media files will be located on a server different then where the actual course content files reside, “content server”. In some cases, relatively few and small media files can be located and served up from the “content server”. Using the HTML “embed” tag or similar tags for Windows Media, Quick Time, and Flash files have been tested in the current ILE (https/SSL) environment and will work. NOTE that these files are NOT being streamed. Real Network Media files WILL NOT work in this scenario. Media files not using an HTML “embed” type tag may work if the media file can be downloaded to the client machine and then ran from the applicable media player. This is not the preferred way due to bandwidth considerations and client side computer settings.

18.0 Java Virtual Machine

Java Virtual Machines (VM)- Due to NMCI restrictions, users can’t download the Sun Micro Systems VM to the client computer. NETC has requested the Sun VM be added to all NMCI computers (Gold Disk) or pushed out to users within the enclave. ILE testing has determined that some content will function properly, communicating with the LMS, with either VM installed, however some content only functions properly dependent on the specific VM installed. It is incumbent on the content developer to insure content will work with either VM installed because Microsoft will no longer be authorized by Sun to have the ability to support the Microsoft VM after the summer, 2004. See http://www.microsoft.com/java for more information.

19.0 Content Submission Method

19.1 Legacy Content

Any content not originally intended for deployment within the Navy Integrated Learning Environment (ILE) (doesn’t meet SCORM 1.2, SCORM 2004, or AICC guidelines) can still be hosted within the ILE. Any legacy content, such as Computer-based training

(CBT) or Web-based training (WBT) originally intended for CD or LAN delivery can be submitted for evaluation by the ILE Content Management Team. Once it has been determined that the ILE will be able to support the legacy content, the government sponsor interested in hosting the content must complete and submit a *Legacy Content Submission Form,* available at the ILE Support Center: https://ile-support.nko.navy.mil.

19.2 Navy ILE Content

The following transactions may transpire for any content submitted and intended for hosting in the Navy's Integrated Learning Environment (ILE). These transactions will continue to evolve with the ILE:

19.3 Announce Delivery Date(s)

The government sponsor and content developer establishes the content development milestones & delivery dates during the kickoff meeting. Expected delivery dates should be communicated to ILE content management & support team during or immediately after the kickoff meeting via the *Content Announcement Form*, available at the ILE Support Center: https://ile-support.nko.navy.mil. Providing delivery dates in advance will help the ILE Content Management Team to gauge incoming content and establish the channels of communication between all entities involved with delivering the content on schedule.

19.4 Content Development

All forthcoming content should be developed according to the Content Design, Development and Deployment Guidelines, Navy Content Object Model (NCOM), NMCI, and any other ILE technical guidelines referenced at the ILE Support Center.

19.5 Mobile Code Signed

In an effort to protect DoD systems from the threat of malicious or improper use of mobile code, we must assess and control the risks imposed by the technology. All Category 1 and Category 2 Mobile code must be signed by an approved ILE mobile code authority. The web-based, *ILE Mobile Code Signing Request Form* is available at the ILE Support Center: https://ile-support.nko.navy.mil.

19.6 Content Submission

The government sponsor and/or content developer must complete a content submission form before any content will be hosted within the ILE. The web-based, *ILE Content Submission Form* is available at the ILE Support Center: https://ile-support.nko.navy.mil. Once the ILE Content Management Team has received the content submission form and deliverables, the government sponsor and developer will receive instructions for government acceptance testing. Once content testing has been completed and

accepted, the government sponsor and/or content developer must provide the final SCORM content package on a separate compact disc. This compact disc must contain the only those files needed for running the content. The government sponsor and/or content developer must also provide any additional disc(s) containing the source files, storyboards, learning content designs, life cycle maintenance guide(s), and any other source & development materials. The completed content submission package should be mailed to: N E T P D T C - N633, BLDG 839 RM 113, 6490 Saufley Field Road, Pensacola, FL 32509-5239.

19.7 Government Acceptance Testing

The content developer and government sponsor must review the content for accuracy and completeness before it is deployed within the ILE. All aspects of the content should be beta tested by the content developer via the Navy's ILE content staging site (aka the G.A.T. site). The ILE Content Management Team will approve access to the ILE content staging site. Access can be provided to government sponsors, SYSCOMS, and Navy learning centers. Any government contractor in need of access must obtain approval through the government sponsor. Access can be requested from the ILE content management & support team by completing the *Content Reviewer Account Request Form*, located at the ILE Support Center: https://ile-support.nko.navy.mil. In special circumstances, developers can also request assistance with troubleshooting content integration issues from the ILE Content Management Team. Content integration questions may be submitted via the *Content Inquiry Form* at https://ile-support.nko.navy.mil or by email: ile_support@netc.navy.mil. However, it is important to note that this support will be provided only as a means of validating the technical interoperability of the content and should not be viewed as a means of exercising a quality control process that would normally be the responsibility of content developer.

19.8 Content Deployment

Navy ILE content will only be accessible via NKO and Navy E-Learning once the content has been tested by the developer and approved by the government sponsor in the Navy’s ILE G.A.T. site. Once the content has been positioned on the correct content server and registered in the Navy Learning Management System catalog, a notification will be sent to the developer and government sponsor informing them that the content is available via NKO & Navy E-Learning.

19.9 Content Revisions

Any revisions to content should be coordinated through the ILE Content Management Team. Each revision will require the developer and government sponsor to follow the content submission process and complete a *Content Revision Form*, available at the ILE Support Center: https://ile-support.nko.navy.mil. When resubmitting content, the content developer and sponsor should specify that the submission is a minor update or major revision. This will affect versioning of the content and must be communicated to the ILE Content Management Team.

20.0 Deliverables

The following deliverables are required for Navy ILE content when applicable:

20.1 Content Package

Each SCORM-conformant content package should be delivered as a PIF (zip-format) on CD or electronically. All other content types (non-SCORM) submitted for hosting within the ILE can be provided in zip format (if possible). All other materials used for content development (i.e. storyboards, learning designs, source files, etc.) should be provided as a separate deliverable on CD and mailed to: ILE Content Management, NETPDTC N633, 6490 Saufley Field Rd., BLD 839 RM 113, Pensacola FL 32509-5239.

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20.2 ADL Test Suite Logs

Developers creating content according to SCORM are required to test a representative sample of their content using the ADL Test Suite (available at http://www.adlnet.org). All content submitted for hosting within the Navy ILE must be accompanied by an electronic version of the ADL Test Suite Log files. These three log files should provide the results for the Sharable Content Object (SCO) Run-Time Environment Conformance Test, the Meta-data Conformance Test, and the Content Package Conformance Test.

20.3 508 Accessibility Test Logs

ILE content should, at a minimum, meet all Priority 1 Checkpoints. In addition, developers must provide written documentation identifying which checkpoints were met. If, after best efforts, developers cannot create an accessible page, they should alternatively provide a link to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is updated as often as the inaccessible (original) page. Developers creating content according to Section 508 Accessibility guidelines are required to test and validate their content using any Section 508 validation & reporting tool (e.g. Bobby, STEP 508, etc.). The test logs should be packaged and included with the content submission package.

20.4 Assessment Answer Key(s)

Developers must provide an answer key for all tests. This will allow the ILE Content Management Team to validate the assessment, and it also provides a valuable life cycle resource for future reference. The answer key can be provided as a text file, database, xml file, or word document.

21.0 Copyright

Authors of web content are viewed as having the same rights as those of other materials, and anyone who violates those rights could be subjected to penalty. Copyright is granted to the creator of a work the moment it is fixed in a tangible medium. Though a Web page rendered on a computer screen doesn't appear to be tangible, copyright is granted to Web authors upon creation of any single page. A page doesn't need to have a copyright notice in order to be protected by copyright law. As technology continues to evolve, the need for an appreciation of both information proprietors' rights and user privileges like "fair use" is expected to intensify.

"Fair use" is the most well-known and most important exception to the copyright owner's rights. The concept of "fair use" was established in the Copyright Law of 1976. It specifies situations in which copyrighted materials may be used without express permission of the copyright holder. The four factors that define "fair use"

interpretation include: purpose, nature of work, amount and market effect. The definition and accompanying factors protects the creator by ensuring that the quantity of the work used is negligible, and of little adverse effect to the market for the work, and that, whenever possible, permission of the creator is sought.

Unfortunately, the lack of intellectual property rights for the web and distance education has forced developers to produce course applications that hinge upon incorporating a distorted balance between copyright law and "fair use". Web applications and web pages should be considered as publications and intellectual property rights will be applied as it would in any other publishing medium. Since copyright law is a bit murky when it comes to issues involving teaching, distance education and the like, obtaining permission is the only solution presently given.

Content developed specifically for the Department of the Navy shall become the property of the US Government and be available to all Government entities without restrictions.